

Appendix O Portable Gauge Audit Checklist

This form can be used to document the annual radiation protection program audit as required by 180 NAC 4-004. The audit consists of a review of the program's content and implementation, evaluating its effectiveness in complying with regulatory requirements and keeping radiation exposures to worker and general public as low as reasonable achievable (ALARA). Records of annual audits must be available for inspection by the Agency.

NOTE: All areas indicated in this audit checklist may not be applicable to every license and may not need to be addressed during each audit.

Licensee's name: _____ License No. _____

Auditor: _____ Date of Audit _____ Telephone No. _____

(Signature)

1. Audit History

A. Last audit of this location conducted on (date) _____

B. Were previous audits conducted yearly? [180 NAC 4-004] Yes No

C. Were records of previous audits maintained? [180 NAC 4-047] N/A Yes No

D. Were any deficiencies identified during last two audits or two years,
whichever is longer? Yes No

If yes please write a brief description of prior deficiencies and corrective actions taken:

2. Organization and Scope of Program

A. If the mailing address or permanent address changed, has the
license has been amended to reflect the change? N/A Yes No

B. If ownership changed or bankruptcy filed, was the Agency's prior consent obtained or was the Agency notified?	N/A	Yes	No
C. If the RSO was changed, was license amended?	N/A	Yes	No
D. Does new RSO meet the Agency training requirements?	N/A	Yes	No
E. If the designated contact person for the Agency changed, was the Agency notified?	N/A	Yes	No
F. Does the license authorize all of the Agency-regulated radionuclides contained in gauges possessed?	N/A	Yes	No
G. Are the gauges as described in the Sealed Source and Device (SSD) Registration Certificate or Sheet?		Yes	No
Have copies of (or access to) SSD Certificates?		Yes	No
Have manufacturers' manuals for operation and maintenance?		Yes	No
H. Are the actual uses of gauges consistent with the authorized uses listed on the license?	N/A	Yes	No
I. Is the RSO fulfilling his/her duties?	N/A	Yes	No
J. Is company management appropriately involved with the radiation protection program and oversight of the RSO's activities?		Yes	No
K. Does RSO have sufficient time to perform all duties/responsibilities?		Yes	No

3. Training and Instructions to Workers

A. Were all workers who are likely to exceed 100 mrem/yr provided radiation awareness training per 180 NAC 10-003?	Yes	No
B. Did each authorized user complete a 8 hour course provided by the manufacturer of the device or any agency approved course?	Yes	No
C. Are training records maintained for each gauge operator?	Yes	No
D. Did interviews with operators reveal that they know the emergency procedures?	Yes	No
D. Did this audit include observations of operators:		
using the gauge in a field situation?	Yes	No
Operating the gauge?	Yes	No
Performing routine cleaning and lubrication?	Yes	No

Transporting the gauge?	Yes	No
Storing the gauge?	Yes	No

E. HAZMAT training provided as required? [49 CFR 172.700, 49 CFR 172.701, CFR 172.702, 49 CFR 172.703, 49 CFR 172.704]	N/A	Yes	No
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4. Radiation Survey Instruments

A. If the licensee possesses its own survey meter, does it meet the Agency's criteria?	N/A	Yes	No
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B. If the licensee does not possess a survey meter, are specific plans made to have one available?	N/A	Yes	No
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C. Is the survey meter needed for non-routine maintenance calibrated as required (180 NAC 4-021)?	N/A	Yes	No
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D. Are calibration records maintained (180 NAC 4-048)?	N/A	Yes	No
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5. Gauge Inventory

A. Is a record kept showing the receipt & transfer/disposal of each gauge? (180 NAC 1-004)	Yes	No
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B. Are all gauges received physically inventoried every six months?	N/A	Yes	No
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C. Are records of inventory results with appropriate information maintained?	Yes	No
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6. Personnel Radiation Protection

A. Are ALARA considerations incorporated into the radiation protection program? (180 NAC 4-004.02)_	Yes	No
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B. Is documentation kept showing that unmonitored users receive $\leq 10\%$ of limit? (180 NAC 4-022.01)	Yes	No
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C. Did unmonitored users' activities change during the year which could put them over 10% of limit?	Yes	No
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D. If yes to c. above, was a new evaluation performed?	Yes	No
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E. Is external dosimetry required (user receiving $>10\%$ of limit)?	Yes	No
And is dosimetry provided to users?	Yes	No

1) Is the dosimetry supplier NVLAP approved? (180 NAC 4-021.03)	Yes	No
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- 2) Are the dosimeters exchanged monthly for film badges and at industry recommended frequency for TLDs? Yes No
- 3) Are dosimetry reports reviewed by the RSO when they are received? Yes No
- 4) Are the records Agency Forms or equivalent? (180 NAC 4-009.04, 180 NAC 4-052.03) Yes No
- NRH-1 "Cumulative Occupational Exposure History" completed? Yes No
 - NRH-2 "Occupational Exposure Record for a Monitoring Period" completed? Yes No
- 5) If a worker declared her pregnancy, did licensee comply with (180 NAC 4-012)? Yes No
- Were records kept of embryo/fetus dose per 180 NAC 4-052.04? Yes No
- F. Are records of exposures, surveys, monitoring, and evaluations maintained (180 NAC 4-047, 180 NAC 4-48, 180 NAC 4-052) Yes No

7. Public Dose

- A. Are gauges stored in a manner to keep doses below 100 mrem in a year? (180 NAC 4-013.01, Item 1) Yes No
- B. Has a survey or evaluation been performed per 180 NAC 4-021.01? Yes No
- Have there been any additions or changes to the storage, security, or use of surrounding areas that would necessitate a new survey or evaluation? Yes No
- C. Do unrestricted area radiation levels exceed 2 mrem in any one hour? (180 NAC 4-013.01, Item 2) Yes No
- D. Are gauges being stored in a manner that would prevent unauthorized use or removal? (180 NAC 4-031) Yes No
- E. Records maintained? (180 NAC 4-048, 180 NAC 4-053] Yes No

8. Operating and Emergency Procedures

- A. Have operating and emergency procedures been developed? Yes No
- B. Do they contain the required elements? Yes No
- C. Does a current copy of the operating and emergency procedures accompany the portable gauge at all time? Yes No

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| D. Does the operating and emergency procedures list the correct phone number for the RSO and the Agency? | Yes | No |
| E. Did any emergencies occur? | Yes | No |
| If so, and were they handled properly by operator? | Yes | No |
| Were appropriate corrective actions taken? | Yes | No |

9. Leak Tests

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| A. Was each sealed source leak tested every 6 months or at other prescribed intervals? | Yes | No |
| B. Was the leak test performed as described in correspondence with the Agency and according to the license? | Yes | No |
| C. Are records of results retained with the appropriate information included? | Yes | No |
| D. Were any sources found leaking ? | Yes | No |
| And if yes, was the Agency notified? | Yes | No |

10. Maintenance of Gauges

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| A. Are manufacturer's procedures followed for routine cleaning and lubrication of gauge? | Yes | No |
| B. Does the source or source rod remain attached to the gauge during cleaning? | Yes | No |
| C. Is non-routine maintenance performed in-house? | Yes | No |
| D. Is yes to C., is non-routine gauge maintenance conducted by authorized personnel following procedures approved by the Agency? | Yes | No |

11. Transportation

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| A. Only DOT-7A or other authorized packages is used to transport gauges? [49 CFR 173.415, 49 CFR 173.416(b)] | Yes | No |
| B. Package performance test records are on file? | Yes | No |
| C. Special form sources documentation? [49 CFR 173.476(a)] | Yes | No |
| D. Package has 2 labels (ex. Yellow-II) with TI, Nuclide, Activity, and Hazard Class? [49 CFR 172.403, 49 CFR 173.441] | Yes | No |

- E. Packages used to ship gauges properly marked and labeled per 49 CFR 172.301, 49 CFR 172.304, 49 CFR 172.310 49 CFR 172.324? Yes No
- F. Shipping containers properly locked, blocked & braced prior to transport? [49 CFR 173.475(f)] Yes No
- G. Shipping papers prepared and used? [49 CFR 172.200(a)] Yes No
- H. Shipping papers contain proper entries? {Shipping name, Hazard Class, Identification Number (UN Number), Total Quantity, Package Type, Nuclide, RQ, Radioactive Material, Physical and Chemical Form, Activity, category of label, TI, Shipper's Name, Certification and Signature, Emergency Response Phone Number, Cargo Aircraft Only (if applicable)} [49 CFR 172.200, 49 CFR 172.201, 49 CFR 172.202, 49 CFR 172.203, 49 CFR 172.204, 49 CFR 172.604] Yes No
- I. Shipping papers within drivers reach and readily accessible during transport? [49 CFR 177. 817(e)] Yes No
- J. Secured against movement? [49 CFR 177. 834] Yes No
- K. Placarded on vehicle, if needed? [49 CFR 172.504] Yes No
- L. Proper overpacks, if used? [49 CFR 173.25] Yes No
- M. Any incidents reported to DOT? [49 CFR 171.15, 16] Yes No

12. Auditor's Independent Survey Measurements (If Made)

- A. Describe the type, location, and results of measurements. Do any radiation level exceed regulatory limits? _____

13. Notification and Reports

- A. Was any radioactive material lost or stolen? (180 NAC 4-057, 180 NAC 3-026) Yes No
If yes, were reports made? Yes No
- B. Did any reportable incidents occur? (180 NAC 4-058, 180 NAC 3-026) Yes No

If yes were reports made? Yes No

- C. Did any overexposures and high radiation levels occur? (180 NAC 4-059, 180 NAC 3-026) Yes No
Were they reported? Yes No

If any events (as described in items a through c above) did occur, what was root cause?

D. Were corrective actions appropriate?_ Yes No

E. Is the licensee aware of telephone number for the Agency Emergency Operations Center? Yes No

14. Posting and Labeling

A. Following documents are posted at permanent facility:
NRH-3 "Notice to Employees" posted (180 NAC 10-002) Yes No

- B. Below documents are posted or a notice indicating the location of the following documents.?
- | | | |
|---|-----|--------|
| . Title 180 NAC | Yes | No |
| Operating & Emergency Procedures | Yes | No |
| The license, conditions or documents incorporated into the license by reference and amendments | Yes | No |
| Any notice of violation involving radiological working conditions, proposed imposition of civil penalties, or order issued to 180 NAC 1 and any response from the licensee. | NA | Yes No |

- C. Radiation signs: (180 NAC 4-034, 180 NAC 4-035)
- 1) "Caution (or Danger), Radioactive Material" signs: posted at permanent facility & job sites where gauges are stored (unless documentation kept describing eligibility for exception described 180 NAC 4-033? Yes No
- 2) "Caution (or Danger), Radiation Area" signs: Is manufacturers' information kept on file to demonstrate that gauge radiation levels are to low to require posting of radiation area signs around gauge storage area? NA Yes No

D. Gauges bear durable, clearly visible labels w/ radiation symbol, "Caution (or Danger), Radioactive Material" warning, & sufficient information to permit individuals to avoid/minimize exposures? Yes No

15. Record Keeping for Decommissioning

- A. Records kept of information important to decommissioning?
(180 NAC 3-018.07) Yes No
- B. Records include all information outlined in (180 NAC 3-018.07)? Yes No

16. Bulletins and Information Notices

- a. Agency Bulletins, Agency Information Notices, Agency Newsletters,
received? Yes No
- B. Appropriate training and action taken in response? Yes No

17. Special License Conditions or Issues

- A. Did auditor review special license conditions or other issues (e.g., non-routine
maintenance)? Yes No

18. Deficiencies Identified in Audit; Corrective Actions

- A. Summarize problems/deficiencies identified during audit.

- B. If problems/deficiencies identified in this audit, describe corrective actions planned or
taken. Are corrective actions planned or taken at ALL licensed locations (not just
location audited)?

c. Provide any other recommendations for improvement.

19. Evaluation of Other Factors

- A. Senior licensee management is appropriately involved with the radiation protection program and/or Radiation Safety Officer (RSO) oversight? Yes No
- B. RSO has sufficient time to perform his/her radiation safety duties? Yes No
- C. Licensee has sufficient staff to support the radiation protection program? Yes No